

A Bag Fixing

The present invention relates to bag fixings and more particularly to fixings used in a bag to define compartments, secure dividers and attach pockets.

In such occupations as photography it is common to provide a large bag within which the photographer customises the interior to accommodate and appropriately protect equipment. The attached drawing marked "prior art" illustrates a schematic plan view of a known bag B. This bag B has internal surfaces S of bag walls W covered with a fleece and hook type fastening material. Thus, patches P can be secured to that surface S in order to locate dividers D or pocket compartment C.

Installation of hook and fleece material to provide or cover the surface S is a cumbersome operation during manufacture of the bag B. Furthermore, attaching patches P in use in order to locate the dividers D or compartment C can be an intricate and frustrating exercise. It should be understood that the surface S must be resiliently secured to the wall W to be effective and large areas of such hook and fleece type fastenings rapidly become fouled with fluff and other contaminants. With respect to attaching patches P it will be understood that there must be a substantially perpendicular fastening force, it is not possible to slide the patches relative to the surface S and again these patches are susceptible to damage and contamination.

It will be noted in the drawing marked "prior art" patches Pp extend between dividers D in order to provide further compartments in the bag B. The patches Pp will also be of a hook and fleece type fastening and again are inconvenient to use. The alternative as illustrated is to provide stitched ridge dividers PD but these again may make installation of the divider assembly more complicated and clearly limit versatility.

In accordance with the present invention, there is provided a fixing for a bag, the fixing comprising a bag loop and a fixing loop along with a clip which comprises two limbs arranged in use to extend respectively into the bag loop and the fixing loop to ensure robust association between the bag loop and the fixing loop, thereby restraining the bag loop and fixing loop against relative movement between them.

Preferably, the clip comprises a hairpin arranged to close at one end with lateral bulging when closed to restrain the bag loop and/or fixing loop. Normally, the lateral bulging is outwardly. Alternatively, the clip is open ended with sufficient resilience to ensure robust association and the limbs provided with bias bulging to provide restraint of the bag loop and/or fixing loop.

Possibly, the clip includes a shaped surface to engage and restrain the bag loop and/or the fixing loop. Typically, two shaped surfaces are provided in the clip to co-operate in order to restrain the bag loop and fixing loop between them. Possibly, the two shaped surfaces are opposed. Advantageously, the two shaped surfaces are reciprocal with re-entrant portions to restrain the bag loop and fixing loop between them.

Possibly, the clip penetrates the materials from which the bag loop and/or fixing loop are made in order to restrain these loops and/or lock the limbs together.

Normally, the clips will be made from plastics materials or metals or a combination thereof with plastics materials to provide grip portions and metal parts to ensure robust association.

Possibly, the clip ends are closed together by detent or latch engagement. Alternatively, the clip ends are closed by interleaving notch engagement between respective ends of the limbs.

Also in accordance with the present invention there is provided a bag

including a fixing as described above.

Typically, the bag loop comprises a band of material secured to a wall of the bag. Normally, the band is sectioned to form a number of bag loops. Possibly, bands of material may be secured to the wall one on top of the other with different section spacings to form different sized bag loops.

Embodiments of the present invention will now be described by way of example only with reference to the accompanying drawings in which;

Fig. 1 is a schematic plan cross-sectional view of a bag;

Fig. 2 is a schematic front perspective part section of a bag wall;

Fig. 3 is schematic plan view of a fixing between a divider and a bag loop;

Fig. 4 is a schematic plan view of a first clip;

Fig. 5 is a schematic plan view of a second clip in an open condition;

Fig. 6 is a schematic plan view of the clip depicted in Fig. 5 in a closed condition;

Fig. 7 is a schematic plan view of a third clip; and

Fig. 8 is a schematic cross section of a fourth clip in a closed condition.

Referring to Fig. 1 illustrating a schematic plan cross-sectional view of a bag 1 in accordance with the present invention. The bag 1 comprises opposed walls 2, 3 with end walls 4, 5 in order to define a space 6. This space 6 is arranged to accommodate or allow accommodation of articles such as photographic equipment. The side walls 2, 3 have bands of material 7, 8 which extend from one end of the bag one to the other. The bands of material 7, 8 are

divided into bag loops 9, 10 within the space 6. The bands of material 7,8 are secured by vertical lines of stitching at least at the ends of each loop 9,10. These bag loops 9, 10 extend normally substantially over the whole depth of the bag 1.

Dividers 11, 12 are provided in which fixing loops 13, 14 are provided at each end. In order to restrain the dividers 11, 12, a clip 15, 16 is arranged to extend between the bag loop 9, 10 and the fixing loop 13, 14. Thus, the fixing loops 13, 14 are held in robust association with the bag loops 9, 10 and so the dividers 11, 12 are restrained within the bag 1.

A bridge divider 17 is provided in the embodiment depicted between dividers 11, 12. The bridge divider 17 includes fixing loops 18 whilst the dividers 11, 12 at an appropriate position include loops equivalent to bag loops 9, 10. Thus, a clip 20 extends respectively between the fixing loops 18 and loops 19 in order to hold the bridge divider 17 in place.

A compartment 21 is also shown secured within the bag 1. This compartment 21 is secured to a fixing loop 22 such that a clip 23 which extends between the fixing loop 22 and a bag loop 10 robustly ensures association between that fixing loop 22 and the bag loop 10.

By use of the fixing loops 13, 14, 22 in robust association with bag loops 9, 10 it will be understood that the dividers 11, 12 and compartment 21 are securely located or restrained within the bag 1. In order to provide such secure location, the clips 15, 16, 23 must effectively hold at least one of the fixing loop 13, 14, 22 or bag loop 9, 10 in a resilient association with the other. Normally the clips 15, 16, 23 have a hairpin shape such that the limbs of the clip 15, 16, 23 respectively extend through one of the fixing loop 13, 14, 22 and the other through the bag loop 9, 10. The bottom of the hairpin clip is then closed in order to provide the restraining engagement in order to secure location of the divider 11, 12 or compartment 21.

Fig. 2 illustrates a part perspective and schematic representation of a bag wall 32 of a bag 31. The bag wall 32 incorporates a band 37 of material which is divided into respective bag loops 39 by stitching 33, 34. One of the bag loops 39 also includes subsidiary bag loops 35 but it will be appreciated that the other bag loops 39 could also incorporate their own subsidiary bag loops. In order to create these subsidiary bag loops, bands of material are layered one upon the other with stitching utilised to create the respective bag loops 35, 39. It will also be understood a bag or a bag side wall may include a single bag loop which extends the full length, or part of the length of the bag only, as required and for easier accommodation particularly within small bags.

It will be noted that the bag loops 39 substantially extend for the full depth of the bag 31. Thus, in use a clip (not shown) will be arranged with one limb extending down and through a bag loop 39, whilst the other extends through a fixing loop, or where required bag loop 35, such that a distal end of each limb of the clip will then generally be secured together in order to restrain the bag loop 39 and fixing loop into a robust association within the bag 31. Alternatively, it will be appreciated that the clip may remain open if that clip has sufficient resilience to maintain association between the bag loop 39 and the fixing loop whilst providing a restraining engagement between the bag loop and fixing loop.

It will be appreciated that restraining engagement is principally required with the bag loop 39 as this bag loop 39 or subsidiary loop 35 will be significantly wider than the clip whilst the fixing loop will generally comprise a sleeve upon the end of a divider or secured to a compartment of similar width. This sleeve will generally be of substantially the same internal dimensions as the clip and so will be resiliently retained within that fixing loop or at least there will only be limited slackness to allow movement whilst the limb in engagement with the bag loop 39 may slide across its width between stitching 33, 34. Such ability for slide adjustment is a significant advantage with the fixing in accordance with the present invention. Securing the distal ends of the clip together will generally bring about resilient and possibly gripping

engagement and so association to secure the relative position of the fixing loop to the bag loop 39. However, prior to such locking of the distal ends together there is scope for slide adjustment of position as required.

Fig. 3 is a schematic plan view of a bag fixing in accordance with the present invention. The same nomenclature is used in Fig. 3 to that used in respect of Fig. 1. Thus, the fixing comprises the bag loop 10 which is associated with the fixing loop 14 secured to a divider 11. The fixing loop 14 essentially comprises a layer of material which overlays a base panel to provide the divider 11. The clip 16 extends between the fixing loop 14 and bag loop 10 in order to provide robust association between those loops 10, 14 and so resiliently position the divider 42 or at least restrain movement from that position. As indicated previously, the clip 16 is essentially of a hairpin configuration such that one end is constructionally closed whilst limbs extend respectively through the fixing loop 14 and bag loop 10 with the distal ends of those limbs secured together to ensure restraining engagement and so robust association between the loops 10, 14 in use. As can be seen, generally the clip 16 is closer to filling the dimensions of the fixing loop 14 and so cannot move within that loop 14 substantially. However, the bag loop 10 is of a far greater width and so generally it is necessary for the clip 16 to have resilient grip engagement with that bag loop 10 in order to provide secure location within a bag (not shown).

Figs. 4 to 8 show various configurations of a clip in accordance with the present invention. Fig. 4 illustrates a clip 55 which is of a general hairpin configuration. Thus, the clip 55 comprises limbs 51, 52 which are secured pivotally about a permanently closed end 53 whilst distal ends 54, 55 are secured together and closed by a closure 56. In use in accordance with the present invention the clip 55 will be arranged such that the limbs 51, 52 will be respectively slid into a bag loop and a fixing loop and their relative positions adjusted such that a divider or compartment secured to the fixing loop is appropriately located within a bag. The closure 56 will then be secured across the distal ends 54, 55 in order to retain robust association between the bag loop and fixing loop. This robust association may be simply through inward

compression of the distal ends 54, 55 by action of the closure 56 such that a spacing 57 between the limbs 51 is compressed and therefore forces compressive engagement with the materials from which the bag loop and fixing loop are formed. Alternatively, inner surfaces of the limbs 51, 52 may be bowed or coated with a coating having a gripping function in order to provide the desired robust association. The closure 56 may act through a twist action where a slot in the closure 56 engages a reciprocal slot in both ends 54, 55, one of these ends 54, 55 if hinged or secured to the other end.

Figs. 5 and 6 illustrate a second clip configuration in accordance with the present invention. Thus, a clip 65 in an open configuration as depicted in Fig. 5 has a wedge or V shape. With limbs 61, 62 extending away from a closed pivot end 63 in an angular relationship. Distal ends 64, 65 are therefore widely spaced in this open configuration depicted in Fig. 5. As previously in use in accordance with the present invention, limbs 61, 62 will be respectively inserted into a bag loop and a fixing loop, adjusted for position and then a closure 66 brought into locking engagement across the distal ends 64, 65 in order to achieve a closed configuration as depicted in Fig. 6. This closed configuration causes lateral bulging or outward bowing in the limbs 61, 62 to cause a lateral displacement of these limbs 61, 62 in order to create a grip or restraining engagement with the bag loop and/or the fixing loop as described previously. In Fig. 6 this lateral bulging is illustrated by arrowheads. It will be understood in order to provide the association required in accordance with the present invention, it is the relatively confined nature of the bag loop and fixing loop sleeves within which the distortion caused by closure of the clip 63, and so lateral bulging, which creates the robust association necessary to position a divider or compartment secured to the fixing loop. The closure 66 may again act through a twisted slot locking regime so that a slot 67 in limb 61 is entered by the closure 66 with a slot 68 in the closure 66 being entered by the remainder of the limb 61 width.

Fig. 7 is a schematic plan view of a third clip configuration in accordance with the present invention., The clip 75 is again of a substantially hairpin

configuration with limbs 71, 72 secured about a closed pivot end 73 and distal ends 74, 75 in use held in a closed relationship by a closure 76. In use, as described previously the limbs 71, 72 will be respectively slid into a bag loop and a fixing loop. The position of the clip 75 and therefore the divider or compartment secured to the fixing loop will then be adjusted and the distal ends 74, 75 locked in a closed configuration by the closure 76. Normally, the limbs 71, 72 will be slightly splayed in order to allow easy insertion into the loops and also slide movement for adjustment. The clip 75 incorporates shaped serrated edges or surfaces 77, 78 which engage the material from which the bag loop and fixing loop are formed. The serrated edges 77, 78 provide the necessary engagement to ensure robust association between the bag loop and the fixing loop and therefore the divider or compartment in use. It will be understood as indicated previously, it is principally gripping engagement with the bag loop that is required in order to provide good resilient positioning within a bag. Thus, a serrated edge on only one side or upon one of the limbs 71, 72 may be all that is required to provide such robust gripping engagement in order to achieve appropriate positioning within a bag. It will be noted that the materials from which the fixing loop and bag loop are formed will generally be located in the zigzag gap between the serrated edges 77, 78. The peaks of the serrated edges 77, 78 may be arranged to penetrate these materials in order to provide further grip. Normally, as illustrated the serration will be interleaved with peaks of one side in valleys of the otherside. However, were desired there may be peak to peak inter-engagement.

Fig. 8 is a schematic plan cross section through a fourth configuration of clip in accordance with the present invention. The clip 85 comprises limbs 81, 82 with distal ends 84, 85 secured together by a closure 86 extending between the limbs 81, 82. A closure 86 can be provided at each end of the limbs 81, 82 or one end as described previously can be configured as a permanent pivot end. In use, the limbs 41, 42 are respectively slid into a fixing loop and a bag loop. The divider or compartment position is then adjusted and the limbs 81, 82 then brought into association. In one derivative of the clip 85 the closed pivot end and closure 86 or closures 86 are then secured at each end of the limbs 81 such



that a re-entrant element 87 is then forced into engagement with at least the bag loop in the direction of the arrowheads. Alternatively, a locking mechanism such as a spike 88 can be provided such that it penetrates material from which the bag loop and the fixing loop are formed and robustly embeds within a surface, such as that of a re-entrant portion 87 in order to close and lock the association between the limbs 81, 82 and therefore the position of the divider or compartment secured through the fixing loop.

It will be appreciated it is the adjustability of the present fixing which provides adjustment within a bag. Thus, penetrative techniques such as that with regard to clip 75 or clip 85 which cause damage to the material from which the fixing loop and bag loop are formed may be considered unacceptable. Normally, the non-damaging but nevertheless restraining configurations describe with respect to Figs. 4 and 5 in relation to clip 55 and clip 65 will be considered more acceptable and also will allow easier adjustment over the lifetime of a bag. Furthermore, the robust association caused by the clip may be set such that by a reasonable force the robust association may be overcome and the divider slid along the bag loop to re-position a divider or compartment secured to that bag loop.

Whilst endeavouring in the foregoing specification to draw attention to those features of the invention believed to be of particular importance it should be understood that the Applicant claims protection in respect of any patentable feature or combination of features hereinbefore referred to and/or shown in the drawings whether or not particular emphasis has been placed thereon.